

# Hazardous Waste Management Commission Report

October - December 2016

## Quarterly Report



## **Hazardous Waste Management Commissioners**

Elizabeth Aull, Chair

James "Jamie" Frakes, Vice Chair

Charles "Eddie" Adams

Michael Foresman

Mark E. Jordan

***"The goal of the Hazardous Waste Program is to  
protect human health and the environment from  
threats posed by hazardous waste."***

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**Missouri Department of Natural Resources  
Hazardous Waste Program**

### Letter from the Director

Dear Commissioners:

This edition of the quarterly report covers the fourth quarter of the year from Oct. 1 through Dec. 31, 2016. This quarter has seen the culmination to our efforts to update and amend the Underground Storage Tank (UST) rules. From the public hearing in October through the Commission's affirmative vote in December, staff have continued to work with stakeholders to address questions and provide training on the new amendments. We appreciate the support of our stakeholders and the commission with this effort and believe it would not have been possible without the backing of both.

While legislative session does not begin until January 4, legislators may pre-file bills beginning on the first of December each year. Staff are continually tracking proposed legislation that could impact the department, in addition to providing information on a variety of environmental issues to our elected officials as questions arise.

Staff continue to work on the statutorily required five year review of rules, required by legislation passed in 2012. This legislation states every five years a notice is published, opening up all rules to a 60 day comment period; whereas all state agencies must do a review of each rule. During this process, they are noting if the rule is necessary, continues to be necessary, is obsolete, overlaps other rules or has other conflicts. Staff continue to review our rules and propose the appropriate amendments that will clean up outdated language and references created by prior amendments to the rules, and to remove rules that are no longer required. The report on our rule review is due to the legislature by June 30, 2017.

As I announced at the December meeting, I will be leaving the Hazardous Waste Program (HWP) in early January to take a position with the department's Kansas City Regional Office. I have sincerely enjoyed my time with the program and working with the Hazardous Waste Management Commission. I am confident that whoever replaces me as Staff Director will bring the same level of concern for the issues we face. In the interim, Angie McMichael, Chief of HWP's Budget and Planning Section, has graciously agreed to serve as acting director until a replacement is selected. I commend each and every one of you for the dedication to the citizens of Missouri as you bring a variety of individual expertise to bear on the issues brought before the commission. I thank you for the commission's continued service to the state of Missouri and know that our environmental future is in capable hands.

Sincerely,



Steve Sturgess  
Director

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### Brownfields/Voluntary Cleanup Program Certificates of Completion

Brownfields are real property where the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight and takes development pressures off greenspaces and working lands. Through this program, private parties agree to clean up a contaminated site and are offered some protection from future state and federal enforcement action at the site in the form of a “no further action” letter or “certificate of completion” (COC) from the state.

Brownfields Voluntary Cleanup Program (BVCP) issued eight COCs for various sites from October through December 2016. This brings the total number of COCs issued to 848.

### Baker Petrolite/Webster Groves Owen Ridge, Webster Groves

The Baker Petrolite/Webster Groves Owen Ridge site is located at 369 Marshall Ave., Webster Groves. This portion of the Baker Petrolite site is to be transferred to Great Rivers Greenway for construction of a trailhead park. The park will serve as a bike trail extending east and west along Marshall Ave.

Based on historical information, no Baker Petrolite plant facilities were located on this parcel. Sampling of soil and shallow groundwater on the site found no significant contamination exceeding Missouri Risk-Based Corrective Action Guidance (MRBCA) unrestricted use target levels. No remediation was required. The department determined the site is safe for its intended use.



Trail Head Site Images  
Shady Grove and Deer Creek Trail



### Cedarwood Development, Kansas City

The Cedarwood Development site is located at 4990 NE Vivion Road, Kansas City. This property has been utilized for commercial retail use since the 1950s. Consisting of two separate parcels of land, the southeastern parcel previously consisted of a strip mall shopping center constructed in 1968. The second parcel of the subject property consists of a structure that housed various restaurants since 1950. In July of 2008, both parcels were redeveloped and are currently occupied by a 12,800 square foot single-story building surrounded by an asphalt parking lot. Missouri CVS Pharmacy, LLC leases the parking lot and operates as CVS Pharmacy #8555.

During an Environmental Assessment, chlorinated solvents consistent with dry cleaning activities were detected in soil and groundwater. During the process of redeveloping the site, workers excavated 4,905 tons of contaminated soil for off-site land disposal and removed 30,000 gallons of impacted groundwater

according to an approved Remedial Action Plan (RAP). Remedial activities concluded in May of 2008, during which four monitoring wells were installed to monitor the effectiveness of the remediation efforts. Between 2008 and 2010, seven groundwater sampling events were conducted. Chemical analysis of the groundwater indicates that contaminants were present in concentrations below MRBCA Tier 1 Risk-Based Target Levels (RBTLs) for non-residential use. The department determined the site is safe for non-residential use with a restrictive covenant.

## Union Station Power House Building, Kansas City

The Union Station Power House Building site is located at 500 W. Pershing Road, Kansas City. The Union Station Power House was developed around 1913 as a powerhouse to generate steam and electricity for Union Station and other nearby buildings. The powerhouse also operated steam shovels used in the construction of Union Station in 1914. Until approximately 1963, a rail siding was located along the south side of the site, which facilitated the delivery of coal to a coal pit structure adjacent to the south side of the power house building. The use of the building as a power house stopped in the late 1960s or early 1970s, and has been unused and vacant since. The remediation work focused on the abatement and removal of lead-based paint (LBP) and asbestos.



Environmental site assessments conducted in 2008-2009 revealed the presence of contamination in soil and groundwater. Polycyclic Aromatic Hydrocarbons (PAHs), arsenic and lead were detected above non-residential standards in surficial soil. Lead was found to exceed the construction worker RBTLs. Even though tetrachloroethylene detected in the groundwater monitoring tested above the default target levels (DTLs), they stayed below residential standards. Thus, groundwater monitoring found the plume to be stable. MRBCA Tier 1 Risk Assessment was conducted in 2012 to evaluate potential exposure risks. An Operation and Maintenance (O&M) plan was put in place along with establishing a construction worker advisory for lead. No removal was conducted as the parking lot acts as a cap, preventing exposure to the impacted soil. The site qualifies for non-residential use with a restrictive covenant.

LBP and Asbestos Containing Material (ACM) inspections were also conducted. Windows, roof material and pipe insulation identified positive for ACM findings. LBP was found on walls, support columns and windows. The abatement of all materials identified as ACM or LBP occurred by the complete removal





and proper disposal from the property. The department determined the site is safe for its intended use.

The property was redeveloped to fit the needs of the Kansas City Ballet Company which includes the Kansas City Ballet School. Current use includes multiple studios for child to adult level classes and productions. Portions of the site also provide office space and meeting rooms for administrative and executive staff. Rooms and studio space may also be rented for private use.

### Calico Labs (former), Festus

The Calico Labs (former) site is located at 100 Industrial Drive, Festus. The 11.92 acre property is mostly consists of a 45,000 square-foot building and associated parking. The building was erected in 1992 and is constructed of concrete block and steel on a sealed concrete floor. A supplier of vending machine coin boxes occupied the property from 1992 until 2002. Since 2003, Calico Laboratories has bottled, labeled, packaged and distributed acetone and non-acetone based nail care products.

Acetone, lead, methyl ethyl ketone, carbon disulfide, p-isopropyltoluene and toluene were identified as possible contaminants from the products used by Calico Laboratories. Sixteen soil samples were collected and chemically analyzed for contaminant concentrations. Results show one soil sample contained acetone in concentrations above the MRBCA DTLs. Chemical analysis showed contaminant concentrations were below MRBCA DTLs from the groundwater samples collected at the nine monitoring wells drilled to a depth of approximately 19 to 24 feet. The potential risks associated with the site-use in soil and groundwater at the property were evaluated in regards to 2006 MRBCA residential use RBTLs for both current and potential future exposure scenarios. Results show that acetone and all other contaminant concentrations were below RBTLs for residential use for all current and future exposure pathways. The department determined the site is safe for its intended use.

## Sites in BVCP

Month	Active	Completed	Total
October 2016	221	846	1067
November 2016	222	846	1068
December 2016	220	848	1068

### New Sites Received: 4

#### October

O'Fallon Center, O'Fallon  
WireCo, St. Joseph

#### November

Mayview School, Mayview  
Kentucky Fried Chicken, St. Louis

#### December

None

### Sites Closed: 4

#### October

Baker Petrolite/Webster Groves Owen Ridge OU,  
Webster Groves  
Cedarwood Development, Kansas City

#### November

None

#### December

Union Station Power House Building, Kansas City  
Calico Labs (former), Festus



## Drycleaning Environmental Response Trust Fund

HWP's Drycleaning Environmental Response Trust (DERT) Fund provides funding for the investigation, assessment and cleanup of releases of chlorinated solvents from drycleaning facilities. The two main sources of revenue for the fund are the drycleaning facility annual registration surcharge and the quarterly solvent surcharge.

### Registrations

The registration surcharges are due by April 1 of each calendar year for solvent used during the previous calendar year. The solvent surcharges are due 30 days after each quarterly reporting period.

Calendar Year 2015	Active Drycleaning Facilities	Facilities Paid	Facilities in Compliance
January - March 2016	119	59	49.58%
April - June 2016	119	102	85.71%
July - September 2016	119	106	89.08%
October - December 2016	119	110	92.44%

Calendar Year 2016	Active Solvent Suppliers	Suppliers Paid	Suppliers in Compliance
January - March 2016	12	11	91.67%
April - June 2016	12	11	91.67%
July - September 2016	12	11	91.67%
October - December 2016	11	10	90.91%

### Cleanup Oversight

Calendar Year 2016	Active Sites	Completed Sites	Total
January - March 2016	19	16	35
April - June 2016	19	16	35
July - September 2016	19	16	35
October - December 2016	19	16	35

**New Sites Received: 0**

**Sites Closed: 0**

### Reimbursement Claims

The applicant may submit a reimbursement claim after all work approved in the work plan is complete and the DERT Fund project manager has reviewed and approved the final completion report for that work. The DERT Fund applicant is liable for the first \$25,000 of corrective action costs incurred.

Month	Received	Under Review	Processed
October	0	1	1
November	3	5	1
December	0	2	0

Month	Received	Under Review	Processed
October	\$0.00	\$16,042.00	\$9,323.00
November	\$40,775.85	\$92,297.20	\$44,315.26
December	\$0.00	\$37,694.60	\$0.00

Two reimbursement claims were processed during this period:

American Cleaners (Ballwin)	Ballwin	\$9,323.00
Tri-States Service Company-Boonville Ave.	Springfield	\$44,315.26

Total reimbursements as of Dec. 31, 2016: \$2,992,507.03

DERT Fund Balance as of Dec. 31, 2016: \$165,347.03

### 2016 - A Year in Review

Each year, the Permits Section coordinates with the U.S. Environmental Protection Agency (EPA) to prioritize activities at hazardous waste facilities subject to the section's oversight. Together, the section and EPA agree on general activity goals. The Performance Partnership Grant Work Plan, an overarching plan that covers the department's air, water and hazardous waste programs, lists the section's general activity goals. The Permits Section and EPA's hazardous waste staff also develop facility-specific current and future goals, which are contained in a related document called the Multi-Year Facility Planning Strategy (MYFPS). Together these two documents guide the section in planning resources and performing activities for the current and future federal fiscal years (FFY).

The MYFPS is a living document and includes goals the section and EPA anticipate accomplishing if all staff positions are filled and all projects go relatively smoothly. Projected tasks and project completion dates are routinely updated for a variety of reasons, such as staff turnover and resources; facility bankruptcy; permit appeals; corrective action dispute resolution; investigation findings leading to additional work; public comments; and intervening short-term priorities. The section routinely updates EPA about the status of the MYFPS goals based on the most recent information available and coordinates new projected completion dates with EPA for any delayed goals.

During FFY16, the section proactively filled the Outreach Planning and Stewardship Unit Chief Position (Planner III), a position within the unit, and redistributed duties. This was done for efficiency and in partial recognition of reductions in grant funding in FFY16, resulting from recent changes to EPA's grant funding formula. Despite funding cuts, EPA requested the state take over as lead agency for certain permit-related activities not previously identified in the MYFPS. This affected the section's ability to complete certain previously established MYFPS goals, which then had to be moved to future years.

At the end of each FFY, the section prepares a report for EPA, documenting progress on all planned and unplanned activities during that fiscal year. The report focuses mainly on permitting, corrective action and groundwater inspection and evaluation activities. The following information is from the FFY16 report, which summarized activities from Oct. 1, 2015, through Sept. 30, 2016.

### Hazardous Waste Permitting Activities

The section coordinated internally and with EPA on the priority of individual projects and tasks as dictated by the National Corrective Action Prioritization System and Overall Priority Ranking System ranking for each facility, as well as goals established by the federal Government Performance and Results Act of 1993 (GPRA). Facility rankings are occasionally adjusted to reflect current environmental and section/EPA project priorities. During FFY16, no facility rankings were adjusted, but certain priorities were adjusted to address the GPRA goals and the needs of our regulated facilities.

During FFY16, the section completed many permit-related activities and modifications not identified in the MYFPS that were important to the operation and economic viability of our regulated facilities. The value of permit modifications, related changes to agency workloads and case history examples of significant permit modifications not identified in the MYFPS in Missouri are highlighted in the January 2016 EPA publication: Permit Modifications Report: Safeguarding the Environment in the Face of Changing Business Needs. This report is available online at: [https://www.epa.gov/sites/production/files/2016-01/documents/permit\\_mod\\_report\\_final\\_508.pdf](https://www.epa.gov/sites/production/files/2016-01/documents/permit_mod_report_final_508.pdf). The section completed the following permit-related activities:

- One emergency permit: Dyno Nobel
- One class 3 permit modification: Safety-Kleen Systems Springfield

- Three class 2 permit modifications: two to Exide Technologies and one to Doe Run Co. One class 2 permit modification request was denied for the Doe Run Co. due to inadequate public participation
- 11 class 1 permit modifications with prior director approval
- 17 class 1 permit modifications without prior director approval
- One closure plan modification: Doe Run Co.
- Five temporary authorizations issued: three to EBV/General Dynamics, one to BASF and one to Expert Management Inc.

During FFY16, the WM Lampracker Permit was terminated based on the completion of closure and corrective action. The section also made progress towards reissuing 16 hazardous waste management facility permits and completing two closures. Though not yet complete at the end of FFY16, the section was working on the following permit-related activities:

- Four class 3 permit modification requests
- One class 2 permit modification request
- Seven class 1 permit modifications with prior director approval

No hazardous waste permit reissuances were finalized during FFY16. The draft permit for the BFI Missouri City Landfill was issued for public review and comment on July 7, 2016. This permit is the first of its kind and includes RAP provisions for construction of an on-site leachate/groundwater treatment plant. Due to a request for a public meeting and approval of two comment period extension requests, the permit was not finalized in FFY16. The draft permit for the Boeing Hazelwood facility, and the accompanying statement of basis for the proposed final remedy, were delayed due to concerns raised by the permittee during their advance 10 day review. These two permits are scheduled to be finalized in FFY17.

## Corrective Action Activities

During FFY16, progress was made on many corrective action activities related to site investigation, monitoring and remediation. The following are some of the highlights.

During FFY16, the section continued to work closely with EPA in an effort to improve the national Resource Conservation and Recovery Act (RCRA) corrective action process by implementing elements of its corrective action Project LEAN framework, now called RCRA Facility Investigation Remedy Selection Track (RCRA “FIRST”). The RCRA FIRST “Tool Box” represents a collection of principles and approaches that focus on identifying and eliminating non-value added activities in the corrective action process, in order to identify and eliminate process inefficiencies, barriers to progress and reduce costs, without compromising human health and the environment. Use of the LEAN framework and related tools continued at the former Zenith facility in Springfield; the Omnium facility in St. Joseph; and the former Amoco (now BP) Sugar Creek refinery in Kansas City.

EPA and the states developed the Environmental Indicator evaluation process together as a way to show progress in protecting human health and the environment and meet the performance and results objectives. The two environmental indicators are “Current Human Exposures Under Control” and “Migration of Contaminated Groundwater Under Control.” These indicators evaluate current environmental conditions, whether people are currently being exposed to environmental contamination at unacceptable levels and whether any existing plumes of contaminated groundwater are expanding, stable or shrinking.



During FFY16, the section, in coordination with EPA, completed two Environmental Indicator evaluations: one for AK Steel and one for PM Resources. At both facilities, human exposures to contamination were determined to be under control. No contaminated groundwater migration evaluations were completed in FFY16. Currently, 58 of the 69 GPRA2020 baseline facilities have documented human exposures controlled; 52 have documented migration of contaminated groundwater controlled. A facility that fails to have an affirmative environmental indicator determination does not mean that human exposures or groundwater migration is occurring, but rather that the facility has not been evaluated yet or that more information is needed to make a determination.

During FFY16, no formal stabilization evaluations were conducted and the Permits Section did not impose any new interim measures on our regulated facilities. However, facility-proposed interim measures were reviewed and approved for Holcim and the closed BFI Missouri City landfill. The section approved several other work plans and reports for incremental/phased work done in support of longer-term corrective action investigation and cleanup goals at several facilities. A final remedy decision, another GPRA goal, for University of Missouri - Columbia was completed during FFY16. Final remedy construction, another high-priority GPRA goal, was completed at the University of Missouri - Columbia and WM Lamtracker Inc. - Kaiser; however, only the University of Missouri - Columbia was on the 2020 GPRA corrective action baseline list of facilities. The current number of facilities with final remedy construction is a cumulative total of 39 of 69 GPRA 2020 baseline facilities thru FFY16. Five additional GPRA goals (corrective action performance standards attained with or without controls) were achieved in FFY16 for:

- Safety-Kleen Springfield
- Safety-Kleen Cape Girardeau
- Safety-Kleen Independence
- Safety-Kleen Columbia
- WM Lamtracker Inc. - Kaiser (facility was not on the 2020 GPRA corrective action baseline list of facilities)

The current number of facilities with corrective action performance standards attained is a cumulative total of 19 of 69 GPRA 2020 baseline facilities thru FFY16.

Together, EPA and the states previously developed a format for facility Ready for Anticipated Use (RAU) determinations to document when facilities are ready for reuse, regardless of whether it is the current use or a future use. Preparing RAU documentation by the Permits Section is included in the current Performance Partnership Grant Work Plan with EPA, but not in the MYFPS document. The section continues to track RAU status and prepare RAU documentation for facilities during the corrective action process. During FFY16, the section completed RAU determinations for River Cement and WM Lamtracker Inc.

### Groundwater Activities

As part of the Performance Partnership Grant Work Plan, the state negotiates preparation of groundwater evaluations at selected hazardous waste facilities with EPA. These evaluations are conducted at post-closure and corrective action facilities with active groundwater monitoring programs and facilities with active and closed land disposal units, such as landfills and surface impoundments, where groundwater contamination is present or needs monitoring to detect releases. These evaluations come in two forms, the comprehensive groundwater monitoring evaluation (CME) and the O&M inspection. The CME is an overarching evaluation of the facility's groundwater monitoring systems and programs. The O&M

inspections, periodically performed as a follow-up to the CME, are focused on examining groundwater sampling plans, procedures and monitoring well maintenance issues. In each case, the section assesses compliance with the applicable groundwater monitoring regulations and permit or order conditions.

Five O&M reports have historically been scheduled for each FFY. Due to diminishing federal grant funding this number has recently been reduced to two O&M reports per year, starting FFY17. During FFY16, no CMEs were scheduled and no O&M reports were finalized. However, all fieldwork for the five O&M reports scheduled for FFY16 was completed. The associated reports were drafted but not finalized during FFY16. Similar to prior years, the delays in report finalization were the result of staff turnover and competing priorities. During FFY16, the section carried out advanced planning for the two O&M reports scheduled for FFY17.

In addition to O&M reports and CMEs, the section routinely performs a detailed review of groundwater monitoring reports submitted by our regulated facilities using an internal checklist. These reviews identify both minor and potentially significant deficiencies with report content or project issues. The section sends significant issues that might influence the representative nature of groundwater samples, data validity, regulatory compliance or project progress to the facility when discovered, rather than waiting until the next O&M report or CME. During FFY16, the section completed five formal groundwater monitoring report reviews using the checklist as well as many informal reviews.

## **Data Management Activities**

The section tracks, both internally and externally, all section activities and accomplishments. External tracking is done through EPA's Resource Conservation and Recovery Act Information (RCRAInfo) database.

The section typically enters data into RCRAInfo as soon as a milestone or goal is achieved, but in no case more than 30 days after the event has occurred or documentation regarding the event is received. As new entries are made, the section reassesses the accuracy of historical state and EPA data. The section corrects errors found in state and joint database entries. If any errors are found in EPA's entries, they are forwarded to EPA's Missouri State Coordinator for reconciliation. The section continued its work with EPA's RCRAInfo Team on the RCRAInfo Data Quality Initiative to resolve issues brought to our attention by the team.

During FFY16, an EPA Office of Inspector General Report raised serious concerns regarding the quality of cost estimation and financial assurance data in RCRAInfo across the nation related to RCRA regulated activities. The section proactively reviewed the data for our Missouri facilities and pointed out to EPA several flawed assumptions used to come to the conclusions in the Inspector General's Report. After corrections were made based on these observations, Missouri demonstrated one of the lowest error rates of two percent among the 50 states related to this information.

## **Financial Assurance Activities**

Owners and operators of facilities actively handling hazardous waste as an interim status or permitted treatment, storage or disposal facility, and facilities with closure, post-closure care or corrective action obligations under other regulatory instruments (e.g., consent orders), are required to meet certain financial assurance and third party liability requirements. This ensures they will have enough funds set aside to close their facility, clean up any releases and compensate third parties for bodily injury or property damage resulting from those releases, even if the facility declares bankruptcy. The facility owners and operators submit closure, post-closure or corrective action plans to the department, as applicable, with cost estimates based on those plans and financial assurance instrument documents sufficient to cover those estimated costs.

Throughout the year, the section monitors the financial health of facilities required to provide financial assurance and conducts annual financial assurance reviews to make sure enough funding is available to cover the cost estimates for their activities. During FFY16, the section conducted 72 financial reviews, which included three Resource Recovery facilities in addition to our hazardous waste treatment storage and disposal facilities.

### Other Activities

During FFY16, the section provided technical support to other HWP sections and the Division of Environmental Quality on several occasions, regarding multiple sites and issues. This support included activities related to technical document review, site characterization, conceptual site models, groundwater plume stability evaluation, groundwater monitoring system adequacy, remedy design, groundwater data interpretation and natural resource damage evaluation.

During FFY16, significant time and resources were spent on several activities related to the Department of Energy/General Services Administration Bannister Federal Complex to coordinate externally and internally and ensure the public was informed. Time was spent reviewing; coordinating within the department, EPA and Department of Health and Senior Services, as needed; and approving documents required by the permit compliance schedule. The section also spent time reviewing and providing comments on multiple work plans and reports prepared by the preferred redevelopment partner, CenterPoint, and their consultants as part of their “due diligence” efforts aimed at future redevelopment of the federal complex.

During FFY 2016, time and resources continued to be devoted to following up on facility bankruptcy issues. Tasks included review, approval and reconciliation of proposed expenditures of trust fund monies recovered during bankruptcy and litigation proceedings to perform facility investigations, maintenance and monitoring. Section staff also provided post-bankruptcy information and technical support to department managers, legal staff, EPA and the Missouri Attorney General’s office regarding bankruptcy-related issues. These issues were related to the following facilities:

- City Environmental Inc. - Kansas City, Mo
- The Doe Run Co. Glover Smelter - Glover, Mo
- Greenfield Environmental Trust LLC (formerly Tronox) - Kansas City, Mo
- Greenfield Environmental Trust LLC (formerly Tronox) - Springfield, Mo
- Omnium LLC - St. Joseph, Mo
- West Star Environmental Inc. - Kingsville, Mo

During FFY 2016, the section provided substantial technical support to the department’s Natural Resource Damage efforts. Tasks periodically included reviewing reports; participating in scoping meetings; participating in monthly technical conference calls; public meetings; creating geographic information system (GIS) based maps; and preparing habitat equivalency analyses.

During FFY 2016, the section worked with EPA headquarters to assess workloads associated with permit modifications and steps to be taken to communicate the importance of permit modification work to EPA upper management and federal budget decision-makers. The section helped collect examples of beneficial permit modification work as part of EPA’s RCRA messaging initiative. The section also participated in discussions and made recommendations regarding RCRAInfo Version 6 redesign related to permit modifications, to make permit modification data entry into RCRAInfo easier and make certain data entry elements mandatory so states get national credit for permit modification work and support for continued RCRA program funding on the national level.

Section staff continued to routinely participate in state and national work groups and teleconferences, including:

- ASTSWMO Program Information Management (PIM) Task Force
- EPA Groundwater Forum
- EPA RCRA Permit Modification Work Group
- State “No Stricter Than” Hazardous Rulemaking Work Group
- RCRA Financial Assurance Work Group
- Monthly RCRA Permit Writers Teleconferences
- Monthly RCRA Combustion Teleconferences
- Monthly RCRA Reuse and Brownfields Prevention Teleconferences
- Monthly RCRA/TSCA Remediation Teleconferences
- Monthly RCRA Subpart X Teleconferences
- Monthly Regulatory Information Network Teleconferences
- RCRAInfo Change Management Process Financial Assurance Expert and Corrective Action Work Groups
- RCRAInfo Data Work Group

## Permit Modifications List Available Online

Businesses actively treating, storing (for longer than allowed by the hazardous waste generator regulations) or disposing hazardous waste in Missouri must get a hazardous waste permit. These permits contain operating and closure requirements for facilities actively managing hazardous waste. These permits may also contain post-closure, corrective action and financial assurance requirements. The department or facility can make changes to the permit throughout its life. Facility-initiated permit modifications are classified as Class 1, 2 or 3, depending on how much they change the permit conditions. Department-initiated permit modifications are not broken down by class. The value of permit modifications and some significant examples in Missouri are highlighted in the EPA publication Permit Modifications Report: Safeguarding the Environment in the Face of Changing Business Needs, available online at: [https://www.epa.gov/sites/production/files/2016-01/documents/permit\\_mod\\_report\\_final\\_508.pdf](https://www.epa.gov/sites/production/files/2016-01/documents/permit_mod_report_final_508.pdf).

The department invites the public to review the list of approved hazardous waste permit modifications for the 2016 calendar year. The permit modification list for calendar year 2016 (and previous years) is available online at: [dnr.mo.gov/env/hwp/permits/publications.htm](http://dnr.mo.gov/env/hwp/permits/publications.htm).



### How Technology Facilitates Site Cleanup

HWP's Federal Facilities Section provides oversight cleanups of sites contaminated with hazardous substances across Missouri that are or were previously owned or operated by the U.S. Department of Defense, U.S. Department of Energy and other federal agencies and private entities. Contaminants at these sites vary and can range from oil; grease; chlorinated solvents to petroleum products; heavy metals; explosives; PAHs; and polychlorinated biphenyls (PCBs) to low-level radioactive waste; unexploded ordnance; munitions; chemical warfare material; and depleted uranium. Due to the unique nature of the contaminants and hazardous substances found at sites overseen by the Federal Facilities Section, diverse technologies have been used to facilitate cleanup goals.



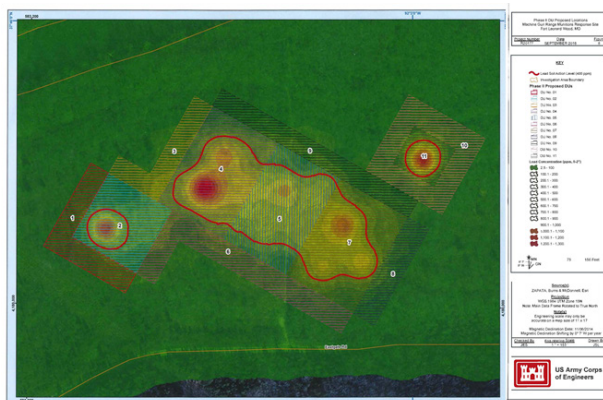
Depending upon the waste identified during site investigations and the media contaminated (air, soil, surface water or groundwater), cleanup methods and technologies are selected and employed to remediate hazardous substances to levels that are protective of human health and the environment. Some examples of technology used during federal facilities site cleanups are surveying, such as geophysical technology; modeling; sampling, assessment and monitoring techniques, such as x-ray fluorescence (XRF), camera technology and incremental sampling methodology (ISM); well sampling methods, such as Snap Samplers and passive diffusion bags (PDB); drilling methodologies such as direct push (Geoprobe) and sonic drilling; remedial technologies; and engineering controls, such as interceptor trenches, and stabilization and solidification. Another technology being utilized at federal facilities sites is phytoremediation, where trees are used to extract groundwater and trichloroethylene.



**XRF technology**, a type of sampling, assessment and monitoring technique, is used to identify metals present in soil and solid surfaces. When the XRF is pointed at a surface, it emits X-rays exciting electrons in atoms present in the sample being tested. The excited electrons release a unique photon of energy that can be used both to identify the metal and determine the amount of the metal in soil. The Federal Facilities section utilizes XRF technology to identify the presence of lead at firing ranges and mercury in wastewater trickling filters and small arms ammunition disposal areas.

The XRF is one of the only portable tools available to identify elemental composition in the field; its portability also makes it convenient to use and conserves time and money. It can be used as a screening tool or in lieu of taking samples, sending them to a lab for analysis and waiting for results.

Another example of a sampling, assessment and monitoring technique is **ISM**. ISM is a structured composite sampling technique being used in the environmental field to sample soil for contaminants. Commonly, 30 to 100 increments of soil are collected, combined, processed and subsampled, following specific protocols. The purpose for this sampling method is to obtain statistically reliable and reproducible sampling results with fewer samples. This in turn leads to better, more defensible decision making. ISM can require less effort and



fewer resources than traditional sampling methods, which makes it an innovative and valuable technology for sampling, assessment and monitoring purposes.

A final example of a sampling, assessment and monitoring technique is **camera technology**. It is used to go into confined spaces that are not safe or simply where people cannot fit, such as down pipes or wells, or through small openings. Cameras can be used to check for leaks or other hidden signs of issues needing to be addressed during cleanup. They provide a visual assessment where people cannot otherwise see.

One of the several new technologies used for well samplings is a **Snap Sampler**. It is a passive groundwater sampling device that seals-in groundwater samples in situ. The Snap Sampler frame holds Samplers that are open on both ends allowing groundwater to flow through. “Snap” end caps are opened and the Samplers are lowered into the sampling well to the required depth. To collect samples, the Snap Sampler bottles seal under the water surface with a manual or electronic trigger line. Volatile organic compounds (VOCs) are not lost during the sampling process because Snap Samplers are sealed at the point of sample. Snap Sampling can be significantly less expensive than the most common groundwater sampling method like low flow sampling.



Another well sampling technology is **PDB sampling** which is a passive groundwater collection technology used particularly for collecting VOCs in groundwater. A PDB sampler is a low-density polyethylene bag filled with deionized water. The deionized water acts like a semipermeable membrane, allowing VOC concentrations in the groundwater to equilibrate with the water within the bag. PDB samplers can also be significantly less expensive than low flow sampling.

**Direct push technology** is a drilling methodology used to identify subsurface geotechnical, geophysical, hydrogeological and analytical factors at a site. It also confirms or denies the presence of features believed to be below ground level. A machine is connected to a vehicle that pushes tools and sensors into the ground, eliminating the need for pre-drilling. Direct push is simpler, faster and less expensive than traditional drilling methods. It is often a replacement for traditional drilling or a screening tool to provide information to optimize traditional well placement. The weight of a vehicle and a small amount of vibration redistribute soil, allowing the tool to reach the desired soil depth. Direct push technology can be applied to provide screening level sampling results for soil, groundwater or vapors; inject substances used to remediate soil or groundwater; install temporary monitoring wells; and for many other applications.



There are several types of engineering controls, one such being **interceptor trenches**. These trenches are typically installed into a shallow aquifer and are used for controlling the migration of contaminated groundwater by capturing contamination or introducing remedial compounds into the groundwater. An interceptor trench can be as simple as a French drain type system or as complex as a deep horizontal well. In general, interceptor trenches are simply constructed and take advantage of other cost and time saving



new technologies, such as continuous trenching equipment, that make this technology an affordable choice in groundwater migration control. The continuous trenching method is used to install various types of vertical barrier walls. It has been developed to make the trenching and wall installation a single pass method significantly cutting time, cost and space required for trenching operations.

**Stabilization and solidification** is an engineering control that treats hazardous and radioactive substances. This treatment technology immobilizes hazardous environmental contaminants by mixing a reagent into contaminated soil or sediment, which binds to the contamination. Depending upon the reaction, contamination could either be rendered immobile or non-toxic. This type of treatment has a wide reaching effect as it can be used to treat a variety of hazardous substances; including metals, PAHs, PCBs and radiologically contaminated materials. It can be performed in situ or directly on excavated contaminated material.

Finally, **phytoremediation** is a form of bioremediation that employs the use of trees to remove, stabilize or destroy contaminants in soil and groundwater. There are two common uses for phytoremediation at federal facility sites. One is phyto-volatilization which is the process of plants taking up contaminated water and releasing the contaminants into the air through their leaves during transpiration. The other use is hydraulic control which uses the trees to remove water from a contaminated aquifer, thereby limiting contaminant movement with the groundwater.



### Examples of how these technologies are currently being used at federal facilities sites include:

- \* Tyson Valley Powder Farm uses geophysics for subsurface characterization and fate and transport studies, in situ chemical oxidation (using persulfate), passive no-purge sampling methods, segregations to reduce waste volumes (sifting and sorting small arms rounds from soil) and XRF sampling to guide excavations in real time.
- \* Lake City Army Ammunition Plant is using a permeable reactive barrier (PRB) and a combination of molasses and vegetable oil to create an in situ reductive zone to treat VOCs; stabilization and solidification using Portland cement for lead stabilization; and focused source soil removal using trench box excavation; and phytoremediation to limit groundwater flow to a PRB that was not performing under the original groundwater flow regime. Two thousand trees were initially planted to help remove water from the aquifer. The same trees may also be removing some of the VOC contamination before it reaches the PRB.
- \* ISM is used at Fort Leonard Wood to optimize the sampling and analysis for the department's munitions constituents investigations at closed ranges located on and around Fort Leonard Wood. ISM allows the department to regulate remedial decisions at these former range sites with heightened confidence over large areas with less sampling than would be required using discreet sampling. Overall, ISM leads to more accurate concentrations for use risk assessments; a better conceptual site model for remedy selection; and ultimately, better and more defensible remedial decisions.

Thanks to these new, diverse technologies, the department is able to help protect human health and the environment by remediating hazardous substances to appropriate levels.

## Regional Office Hazardous Waste Compliance Efforts

- Conducted 109 hazardous waste generator compliance inspections:
  - 18 large quantity generators
  - 42 small quantity generators
  - 38 conditionally exempt small quantity generators
  - One focused compliance inspection
  - Seven E-waste facilities
  - Three resource recovery facilities
- Issued 35 letters of warning and six notices of violation (NOVs) requiring actions to correct violations cited during the 109 inspections conducted
- Of the six NOVs issued, four included a referral to consider further enforcement action
- Conducted four compliance assistance visits at hazardous waste generators
- Received 12 citizen concerns regarding hazardous waste issues and conducted field investigations on 10 citizen concerns

## Special Facilities Unit

### *Commercial Facility Inspectors*

Special facilities inspectors conducted 12 inspections of commercial hazardous waste treatment, storage and disposal facilities.

### *PCB Inspector*

The inspector conducted 22 compliance inspections at various types of facilities throughout the state. The inspector's reports are forwarded to EPA Region 7, which has authority for taking any necessary enforcement action regarding PCBs according to the Toxic Substances Control Act.

### *Hazardous Waste Transporters*

Fifty-five Hazardous Waste Transporter License compliance background checks were completed. Staff also updated the Missouri's List of Licensed Hazardous Waste Transporters. The list includes transporters licensed to haul hazardous waste, infectious waste and used oil in Missouri and it can be accessed on our webpage: [dnr.mo.gov/env/hwp/transporters.php](http://dnr.mo.gov/env/hwp/transporters.php).

## Hazardous Waste Enforcement Unit

### *Enforcement Efforts*

- Resolved five hazardous waste enforcement cases
- Received two new enforcement cases

### *Slaughters Cleaners, former (4164 LLC), St. Louis*

4164 LLC owns a property in St. Louis, which is the site of a former dry cleaning facility. Hazardous waste such as tetrachloroethylene was generated at this facility in the past; however, the property has been vacant since at least Jan. 29, 2014. During an inspection conducted on Jan. 29, 2014, the department observed suspected hazardous wastes on the property including an estimated 12, 15-gallon containers



and a variety of different kinds and sizes of containers of unknown materials. Based on the inspection, the department issued a letter of warning on April 8, 2014, for failure to determine if a waste is a hazardous waste. On Nov. 10, 2014, the department issued NOV #5657E for continued failure to address the issues. On April 22, 2015, the department conducted a case development inspection to observe the sampling of the materials in containers behind the building to determine if the waste was hazardous and make observations of any materials not previously documented. 4164 LLC declared that approximately 12, 15 gallon containers, numerous containers, floor residues, sludge and contaminated soil would be managed as a hazardous waste. Between April 2015 and March 2016, the department attempted to compel 4164 LLC to dispose of the hazardous waste.



On approximately March 18, 2016, 4164 LLC documented that approximately 2,400 pounds of hazardous waste was disposed. To prepare for the disposal, 4164 LLC had to register as a large quantity generator of hazardous waste. 4164 LLC failed to pay hazardous waste registration fees and to amend their generator notification forms to correctly reflect the facility's operations after disposal. To prompt resolution of these remaining issues, the department issued Administration Penalty Order (APO) #16-HWE-P002 for penalties and to correct remaining violations.

4164 LLC appealed APO #16-HWE-P002 with the Administrative Hearing Commission. Prior to the hearing, the department and 4164 LLC reached an agreement and APO #16-HWE-P002 was amended to contain the following terms. 4164 LLC agreed to a penalty of \$6,000 of which \$2,000 will be paid in four equal installments of \$500 beginning three months after the department's signature of the APO. The remaining \$4,000 will remain suspended, contingent on 4164 LLC's compliance with the Missouri Hazardous Waste Law for two years and with APO #16-HWE-P002. The corrective actions remained unchanged from the original APO.

### ***Hutchens Industries Inc., Mansfield Facility, Mansfield***



On April 28, 2015, a compliance evaluation inspection was conducted at Hutchens Industries Inc., Mansfield Facility, in Mansfield. Hutchens Industries Inc., performs welding, cutting and painting of metal parts in the manufacturing of trailer and bus suspensions. On May 13, 2015, NOV #1619SW was issued noting six violations including: failure to update notification; failure to make a hazardous waste determination; and minor storage violations. A follow-up inspection on Aug. 31, 2015, and a phone call on Oct. 21, 2015, verified the violations had been corrected. Hutchens Industries Inc., agreed to amicably

resolve all claims the department might bring against the company by signing an Administrative Order on Consent including a penalty in the amount of \$1,500.00.

## Pesticide Collection Program Activities

Staff conducted training at the Missouri Green Industry Conference in St. Charles on Dec. 7, 2016, on how to properly dispose of unneeded pesticides and how to prepare for pesticide related emergencies.

Staff helped create a brochure *Pesticide Waste Management* (PUB 2701) that can be distributed at pesticide applicator training and other related outreach events. It can be found on the department's website at: [dnr.mo.gov/pubs/docs/pub2701.pdf](http://dnr.mo.gov/pubs/docs/pub2701.pdf).

### *Pesticide Collection Events*

Pesticide collection events have been scheduled for 2017.

1. Portageville, March 11, 2017, 8 a.m.-noon, University of Missouri – Fisher Delta Research Center, 147 W. State Highway T, Portageville, Mo 63873
2. Fairfax, March 25, 2017, 8 a.m.-noon, University of Missouri – Graves-Chapple Research Center, 29955 Outer Road, Fairfax, Mo 64446
3. St. Peters, June 3, 2017, 8 a.m.-noon, University of Missouri Extension Center – St. Charles County, 260 Brown Road, St. Peters, Mo 63376
4. Sikeston, June 24, 2017, 8 a.m.-noon, DeWitt Auction Co., 220 DeWitt Drive, Sikeston, Mo 63801
5. Chillicothe, July 15, 2017, 8 a.m.-noon, Litton Ag Center, 10780 Liv 235, Chillicothe, Mo 64601
6. Lockwood, Oct. 14, 2017, 8 a.m.-noon, S&H Farm Supply, 7 State Road A, Lockwood, Mo 65682

Check out the Pesticide Collection Program webpage at: [dnr.mo.gov/env/hwp/pesticide](http://dnr.mo.gov/env/hwp/pesticide) for fliers.

## UST Compliance and Technology Unit

### *Federal rule changes*

In 2011, EPA proposed significant changes to the UST regulations. The final version of those federal rules was published in July and became effective Oct. 13, 2015. Please note, these rules are not yet effective in Missouri; they will not be effective in Missouri until the department promulgates Missouri's regulations or until EPA follows its procedures for withdrawal of our state program approval. The rule includes new testing requirements for release detection equipment; overfill prevention equipment (e.g., flapper valves, ball float valves and alarms), spill buckets, and containment sumps. Previously deferred airport fuel hydrant systems and field constructed tanks will now be regulated. Missouri must also include a new requirement for all new systems installed after July 1, 2017, to be double walled with enhanced leak monitoring.

The draft rules were published on Sept. 15, 2016, in the *Missouri Register*, with two rules reprinted in the Oct. 3, 2016, *Missouri Register* to correct a typo. Public hearings were held on Oct. 20, 2016, and Nov. 3, 2016. The formal comment period for all of the rules is now closed. The department presented the final proposed rules at the Dec. 15, 2016, Hazardous Waste Commission meeting. The Commission voted to adopt the draft presented, which is available on our webpage. For the final draft, updates and information on these upcoming rule changes, please visit our webpage: [dnr.mo.gov/env/hwp/ustchanges.htm](http://dnr.mo.gov/env/hwp/ustchanges.htm).

### *Operator Training*

Operator training is available online. Class A/B operator training and Class C operator training are both available, as well as a "test only" option. The rule is also available online, which includes a compliance deadline of July 1, 2016. The department and the Missouri Petroleum Storage Tank Insurance Fund (PSTIF) will also be accepting reciprocity from some of our neighboring states. The training program may be found on PSTIF's webpage: [optraining.pstif.org/intro/](http://optraining.pstif.org/intro/).

### ***Tank Inspections***

The department inspections continue, including the new installation inspections, out of use sites and complaint/suspected leak investigations. In addition, the contract inspector continues to inspect operating UST facilities. As seen in previous years, Missouri owners, operators and contractors continue to demonstrate their proactive compliance by being responsive to issues when found, demonstrating a willingness to be a partner in ensuring all Missouri USTs are in compliance. The department is maintaining compliance with the EPA requirement of inspecting all regulated facilities at least every three years. The department must also demonstrate all facilities are either in compliance or are moving to gain compliance. This goal is much easier to accomplish when owners, operators, contractors and regulators are all working together.

### ***Financial Responsibility***

Efforts continue to resolve violations with facilities not maintaining a financial responsibility mechanism to address releases and to protect third parties. Because of these efforts by the UST Compliance and Technology Unit staff and the Attorney General's Office (AGO), the number of facilities without a verified financial responsibility mechanism is less than two percent.

### ***Enforcement Efforts***

In this time period, 12 cases were referred to the AGO for enforcement action.

The following enforcement actions were taken in this quarter:

<b>Facility/Responsible Party</b>	<b>Summary of Violation</b>	<b>Resolution Summary and Compliance Status</b>
SPRMG LLC (dba Jefferson BP Gas Station) 3258 S Jefferson Ave. St. Louis, Mo	Financial responsibility violation.	Site referred to the AGO on Oct. 18, 2016, to pursue compliance and civil penalty.
Aanaser, Inc 9666 Watson Road St. Louis, Mo	Failure to have financial responsibility.	Site has corrected violation, the AGO is currently negotiating civil penalty.
Pleasant Hill Fast Stop 301 S 7 Highway Pleasant Hill, Mo	Financial responsibility, UST upgrade and cathodic protection violations.	Site referred to the AGO on Oct. 28, 2016, to pursue compliance and civil penalty.
Oakville Car Service 4390 Telegraph Road St. Louis, Mo	Financial responsibility and registration fees violations.	Site has paid registration fees. Referred to the AGO on Oct. 1, 2016, to pursue financial responsibility compliance and civil penalty.
Roadway BBQ 22051 Chevalier Road La Monte, Mo	Financial responsibility violation.	Site referred to the AGO on Oct. 18, 2016, to pursue compliance and civil penalty.
Pevely ZX 1999 Highway Z Pevely, Mo	Financial responsibility violation.	Site referred to the AGO on Oct. 28, 2016, to pursue compliance and civil penalty. Site returned to compliance on Dec. 16, 2016. Civil penalty being pursued.
Grab And Go Pearce 301 E Pearce Blvd. Wentzville, Mo	Financial responsibility and registration violations.	Site referred to the AGO on Oct. 28, 2016, to pursue compliance and civil penalty.
Howe Oil 100 E Orleans St. Pacific, Mo	Remedial action and failure to comply with Abatement Order violations.	Site referred to the AGO on Oct. 26, 2016, to pursue compliance and civil penalty.
Gills Quick Stop, LLC 7690 Hillsboro House Springs Road Hillsboro, Mo	Financial responsibility violation.	Site referred to the AGO on Oct. 18, 2016, to pursue compliance and civil penalty.

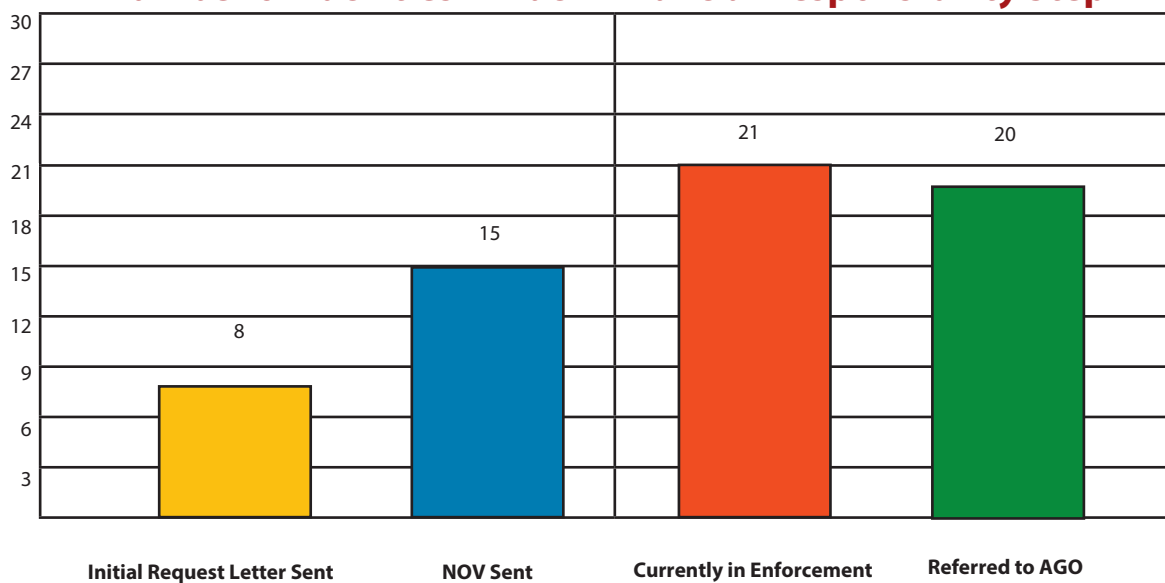
Conoco Convenience Plus 351 SE Third Street Lee's Summit, Mo	Financial responsibility, UST release detection and registration fee violations.	Site referred to the AGO on Nov. 7, 2016, to pursue compliance and civil penalty.
Everton Rt 2 Box 171 A Everton, Mo	Failure to permanently close out of use UST and registration fee violations.	Consent Judgment entered on May 19, 2015, with civil penalty imposed by the court. Site later sold for overdue tax purposes and information provided by the AGO indicated no ability to pursue civil penalty. Case closed and will focus future work with new owner of site.
Flash Market #381 1243 St. Louis St. West Plains, Mo	Financial responsibility violation.	Site referred to the AGO on Nov. 10, 2016, to pursue compliance and civil penalty.
Flash Market #332 240 State Hwy F Cardwell, Mo	Financial responsibility and registration violations.	Site referred to the AGO on Nov. 10, 2016, to pursue compliance and civil penalty.
Everyday Store #1070 17121 E 40 Hwy Independence, Mo	Financial responsibility, site assessment and permanent closure of out of use UST. Filed to conduct testing of vapor recovery system.	Global Consent Judgment entered on Dec. 14, 2016. Site established financial responsibility mechanism, but still needs to address outstanding closure issues.
Four Season Industries Inc. 403 E St. Parkville, Mo	Permanent closure and registration fee violations.	Consent Judgment entered on July 22, 2014. Responsible party removed USTs, but was financially unable to address all contamination. Responsible party filed bankruptcy and property was awarded to Park University.
Inner City Oil #2 801 Prospect Kansas City, Mo	Site not referred for UST violations, but was included in Global Consent Judgment. Failed to conduct testing of vapor recovery system.	Air Pollution Control Program Summary: Global Consent Judgement entered on Dec. 14, 2016. Terms included a \$31,000 penalty, of which \$11,000 will be fixed through a payment structure and \$20,000 of that suspended. Facility has returned to compliance.
Lazy Lee's One Stop #4 Hwy 5 and Marshfield St. Hartville, Mo	Financial responsibility violation.	AGO filed motion for voluntary dismissal as USTs had been emptied, therefore not requiring financial responsibility.
Liberty Harbor #1 Liberty Harbor Drive Portage Des Sioux, Mo	Failure to comply with out of use/permanent closure requirements, UST release detection requirements and registration fee violations.	USTs removed with additional remedial actions needed. Consent Judgment was entered on Dec. 16, 2016.
My River Home Boat Harbor 1545 Riverview Drive Portage Des Sioux, Mo	Financial responsibility violation.	Site referred to the AGO on Dec. 9, 2016, to pursue compliance and civil penalty.
Quick Stop 312 N Maguire Warrensburg, Mo	Financial responsibility violation. Failed to conduct testing of vapor recovery system.	Global Consent Judgment entered on Dec. 14, 2016. Site to maintain financial responsibility mechanism.
Rowlands Amoco 801 Mitchell St. Joseph, Mo	Permanent closure of USTs, registration fees, failure to maintain upgrades to UST violations.	Site sold and the new owner conducted permanent closure and received a No Further Action letter. Previous owner(s) not financially viable.
Sinclair Retail Station #24060 1617 W 75th St. Kansas City, Mo	Financial responsibility violation. Failed to conduct testing of vapor recovery system.	Global Consent Judgment entered on Dec. 14, 2016. Site to maintain financial responsibility mechanism.

High Ridge BP 2909 High Ridge Blvd. High Ridge, Mo	Financial responsibility, permanent closure and site assessment violations.	Consent Judgment entered on Dec. 17, 2015. Responsible party filed bankruptcy and property was acquired by the county for back taxes.
Star Foods Inc. PO Box 52 Winona, Mo	Financial responsibility, failure to comply with out of use requirements, permanent closure requirements and registration violations.	Responsible party filed for bankruptcy and site foreclosed on by the bank. Unable to further pursue enforcement actions as the responsible party no longer viable. Case closed.

## UST Facilities with Unknown Financial Responsibility Status Report

Financial Responsibility Status	Number of Facilities
Initial Request Letter Sent	8
NOV Sent	15
Currently in Enforcement	21
Referred to AGO	20
Total Number of Facilities with Unknown Financial Responsibility	64

## Number of Facilities in Each Financial Responsibility Step





## Annual UST Sources and Causes Report

The HWP's Tanks Section's Annual Public Record Report for the period of Oct. 1, 2015, through Sept. 30, 2016, is on the Tanks' section website at: [dnr.mo.gov/env/hwp/tanks/index.htm](http://dnr.mo.gov/env/hwp/tanks/index.htm). This report will also be made available by request to those without Internet access.

Subsection (c) of Section 1526 of the Energy Policy Act amended Section 9002 in Subtitle I of the Solid Waste Disposal Act to add requirements for states to maintain, update and make available to the public a record of underground storage tanks regulated under Subtitle I. EPA requires each state receiving funding under Subtitle I to meet the public record requirements. Subsection (d) of Section 9002 in Subtitle I requires EPA to prescribe the manner and form of the public record and says the public record of a state must include:

1. The number, sources and causes of UST releases in the state
2. The record of compliance by USTs in the state with Subtitle I or a state program approved under Section 9004 of Subtitle I
3. Data on the number of UST equipment failures in the state

The first section of the report describes the number of UST facilities, individual regulated tanks, compliance rates in Missouri and an individual breakdown of the sources and causes of releases opened in federal fiscal year 2016.

- Three instances of physical or mechanical damage to piping.
- Nine instances of physical or mechanical damage to the piping area.
- Four instances of physical or mechanical damage to the dispenser area.
- One instance of physical or mechanical damage to the submersible turbine area.
- One corrosion related releases in the tank area.
- One corrosion related releases in the piping area.
- Two unknown tank or dispenser related issues.
- Seventy-one historical releases (unknown source). The unknown releases where a definitive source or cause of release was not able to be determined were discovered during:
  - Tank closure
  - Phase II investigations during property transactions
  - Other investigations

The website also includes reports on the sources and causes of UST leaks for previous years, beginning with 2008.

## Tanks Accomplishments for 2016

- Held the Ninth Annual UST workshop as part of the Missouri Waste Control Coalition Conference in July. The tanks workshop, held as a tract at the conference, featured department staff, along with private consultants providing training regarding the use of free product recovery and Light Non-Aqueous Phase Liquid conceptual site models.
- Tanks Section staff participated in the ASTSWMO Leaking UST and State Fund Meeting.

- Tanks staff continued to participate on a workgroup for the International Technology and Regulatory Council on Petroleum Vapor Intrusion.
- Compliance and Enforcement staff continue to be a member of the National Work Group on Leak Detection Evaluations.
- The Tanks Section continued participation on the ASTSWMO Emerging Fuels Task Force.
- The Tanks and Compliance and Enforcement Section provided technical assistance at the annual PACE convention.
- Continued an initiative on closing tank remediation sites that have been open for more than 20 years. The goal is to help provide additional information to the consultant to facilitate completion of these projects and help to achieve no further action status for these sites.
- Developed a draft free product guidance for staff to train staff. This document was forwarded to consultants for comments and will be finalized in 2017.
- The Tanks Section continued to work on the Tanks Backlog Plan.
- The Tanks Section completed the investigation of drinking water contamination in Marston.
- The Tanks Section, completed repairs to the private drinking water well in Buffalo.
- The Tanks Section continued to utilize funding to provide some overtime to staff to reduce turn-around times on document reviews. It continued to contract with one private contractor to provide state oversight of work on tanks sites. With these additional funds, Tanks estimate it can increase the number of cleanups using the MRBCA guidance and decrease turnaround times.
- The Budget and Planning Section continued to provide tracking of financial responsibility (FR) to identify all sites without FR. The Compliance and Enforcement Section continued to take actions to assure sites without FR would obtain coverage and to pursue penalties for sites that had not maintained FR. These actions helped maintain a high compliance rate of over 98% for facilities with acceptable FR.
- Continued to update tanks GIS data to conform with department standards and work to add tank facilities and cleanup sites to the department's Long Term Stewardship mapper. The mapper went live with tank sites in December 2016.
- Continued development of database enhancements and tracking systems.
- The Tanks Section continued to maintain an average turn-around time of 44 days that meets section goals.
- The Tanks Section was able to maintain a reduced turn-around time on closures - averaging less than 14 days
- The Compliance and Enforcement Inspection team conducted 184 new installation inspections. The inspection team also continues to maintain their training, often direct from the manufacturers, on proper installation of tanks, piping and other equipment.

- During calendar year 2016, the department accomplished the following work related to petroleum storage tanks:
  - Properly closed 423 tanks.
  - Reviewed 116 closure reports.
  - Approved 122 closure notices.
  - Conducted eight closure inspections.
  - Conducted three site investigations.
  - Responded to 18 emergencies involving petroleum releases.
  - Oversaw completion of 170 remediation sites.
  - Issued 392 certificates of registration.
  - A total of 87 new releases were reported during calendar year 2016.
  - Remediation staff received 2,348 remediation documents and generated 2,342 response letters.
  - Department staff were notified of 83 new installations at tank sites and received 43 new site registrations.
  - Compliance and Enforcement Section staff resolved 77 cases involving violations.
  - At the end of the 2016 calendar year, there were 121 active enforcement cases.
  - Financial responsibility compliance was at 98.1 percent. This number reflects insurance coverage from both PSTIF and other private policies and statements.
  - The department currently regulates 3,417 facilities with 8,890 active underground storage tanks.

Missouri Department of Natural Resources - Hazardous Waste Program

TANKS

Petroleum Storage  
Tanks Regulation  
December 2016

Staff Productivity	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	TOTAL
Documents received for review	185	224	215	199	196	157	0	0	0	0	0	0	1,176
Remediation documents processed	151	218	226	186	175	118	0	0	0	0	0	0	1,074
Closure reports processed	3	18	15	13	6	7	0	0	0	0	0	0	62
Closure notices approved	12	11	11	14	5	10	0	0	0	0	0	0	63
Tank installation notices received	7	7	5	4	2	5	0	0	0	0	0	0	30
New site registrations	4	5	3	1	2	2	0	0	0	0	0	0	17
Facility Data	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	TOTAL
Total in use, out of use and closed USTs	41,146	41,170	41,191	41,216	41,226	41,236	0	0	0	0	0	0	
Total permanently closed USTs	32,217	32,253	32,287	32,317	32,335	32,346	0	0	0	0	0	0	
In use and out of use USTs	8,929	8,917	8,904	8,899	8,891	8,890	0	0	0	0	0	0	
Out of use USTs	721	702	693	699	979	674	0	0	0	0	0	0	
Total hazardous substance USTs	405	405	404	404	404	404	0	0	0	0	0	0	
Facilities with in use and out of use USTs	3,430	3,425	3,421	3,420	3,419	3,412	0	0	0	0	0	0	
Facilities with one or more tank in use	3,176	3,177	3,173	3,170	3,174	3,174	0	0	0	0	0	0	

Closures

Underground Storage Tanks	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	TOTAL	All Yrs
Closure Reports Reviewed	3	18	15	13	6	7	0	0	0	0	0	0	62	
Closure Notices Approved	12	11	11	14	5	10	0	0	0	0	0	0	63	
Number of Tanks Closed (Closure NFA)	6	35	37	21	33	38	0	0	0	0	0	0	170	

Cleanup

Underground Storage Tanks													TOTAL	All Yrs
UST release files opened this month	5	9	12	10	9	5	0	0	0	0	0	0	50	6,781
UST cleanups completed this month	4	19	16	7	18	10	0	0	0	0	0	0	74	6,048
Ongoing UST cleanups	797	787	782	786	777	772	0	0	0	0	0	0		
Aboveground Storage Tanks														
AST release files opened this month	0	1	2	1	0	0	0	0	0	0	0	0	4	491
AST cleanups completed this month	0	3	4	0	1	0	0	0	0	0	0	0	8	309
Ongoing AST cleanups	178	176	174	175	174	174	0	0	0	0	0	0		
Both UST and AST														
Total release files-both UST & AST	0	1	0	0	0	0	0	0	0	0	0	0	1	83
Cleanups completed-both UST & AST	0	0	0	0	1	1	0	0	0	0	0	0	2	56
Ongoing cleanups-both UST & AST	28	29	29	29	28	27	0	0	0	0	0	0		
Unknown Source														
Total release files-unknown source	0	1	1	0	0	0	0	0	0	0	0	0	2	230
Cleanups completed-unknown source	0	0	0	0	0	0	0	0	0	0	0	0	0	214
Ongoing cleanups-unknown source	14	16	17	17	17	17	0	0	0	0	0	0		
Documents Processed	151	218	226	186	175	118	0	0	0	0	0	0	1,074	

*\* Reopened Remediation Cases was added Nov. 18, 2009 - the cumulative total has been queried and a running total will be tracked/reported with the FY 2010 Tanks Section Monthly Reports.*

*Effective December 2008 tanks with unknown substance will be included in total figures. Some measures are re-calculated each month for all previous months to reflect items added or edited after the end of the previous reporting period.*